Kent County Council

Review of KCC Net Zero 2030 Plan

Q4 2024

Contents

Executive summary

KCC published a Net Zero Action Plan in 2020 which aimed to deliver net zero for its own estate and activities by 2030. This report charts overall progress and key achievements through the delivery of this plan. Individual actions in the plan are then quantified in terms of tonnes of carbon dioxide equivalent (tCO2e) alongside a summary of key issues. Emissions data is then used to calculate 'where the plan takes us' in terms of emissions that are left over and sets out estimated costs of carbon offsetting. Indicative costs are provided for delivering the remaining targets. Business miles and Scope 3 data is discussed separately.

Key findings

- KCC has made good progress against the Net Zero Plan. Since the plan was adopted, KCC's greenhouse gas (GHG) emissions have decreased by 11,818 tonnes of carbon dioxide equivalent (tCO2e), or 51% from the baseline year (2019-20) to date (2023-24).[2]
- KCC's related achievements over this period include[3]:
    - Construction of two solar farms delivering 25MW of green electricity (saving over 5,500 tCO2 annually)[4]
    - 57% reduction in oil, 56% reduction in electricity, and a 17% reduction in gas emissions in our estate (a reduction of 5,347 tCO2)
    - Efficiencies and savings across the estate, including rationalisation of estate saving over 838 tCO2e (of combined electricity and gas emissions) annually
    - 70% reduction in waste from KCC's estate and operations and 30% reduction in mileage emissions (a reduction of 1,441 tCO2)
    - Significant heat pump projects at five sites providing savings of 677 tCO2e annually
    - Continued roll-out of LED lighting and Solar PV saving an additional 380 tCO2e annually.
- KCC net zero projects have predominately been funded through government schemes. Changes to these schemes mean that the latest round required match-funding, with some uncertainty regarding how this scheme design may change going forward.
- To reach the targets set out in the original plan, additional savings of 6,223 tCO2e need to be delivered.
- Delivery of the Published Plan in full will reduce KCC's emissions to 3,210 tCO2e. It is assumed, under the current plan, that in order to reach zero, remaining emissions will be offset. The quantum of these remaining emissions mean that additional carbon reduction initiatives where technological solutions exist are required to reduce the offsetting requirement.
- The understanding of costs and savings to deliver the Plan is indicative.
- The Plan blends operational footprint (Scope 1 & 2) and service delivery (Scope 3) meaning that certain elements of the plan are outside of KCC's direct control and therefore do not fit with an operational Net Zero plan.
- The totality of KCC's Scope 3 emissions (all the goods and services KCC procure and deliver) is currently unknown but is estimated to be in the region of 400,000 – 800,000 tCO2e.

1. Emissions in KCC's estate and operations

In 2020, Kent County Council "committed to reduce greenhouse gas emissions from our own estate, operations and wholly owned traded services to Net Zero by 2030" and published an "accelerated target with associated action plan".[1] KCC has measured carbon dioxide emissions arising from its own estate and operational activities since 2005, and in September 2021, established a new baseline and methodology (following the Greenhouse Gas (GHG) Protocol) for reporting emissions.[2]

The GHG Protocol organises emissions into three scopes:

Scope 1: emissions from things we burn; oil, gas, petrol and diesel.

Scope 2: emissions from the electricity we purchase.

Scope 3: emissions from service delivery and supply chain activities. Currently we only consider business miles and waste from our estate and operations within Scope 3.

KCC's emissions (Scope 1, 2 and 3) for 2023-2024 were 11,279 tCO2e.

Figure 1 sets out KCC's GHG emissions by scope and compares emissions from 2019-20 and 2023-24.

Figure 2 sets out KCC's emissions by use for the latest full year of data.

See Appendix 1 and 2 for full details on GHG emissions from Scope 1- 3.

Figure 1: KCC's GHG emissions (tCO2e) by scope

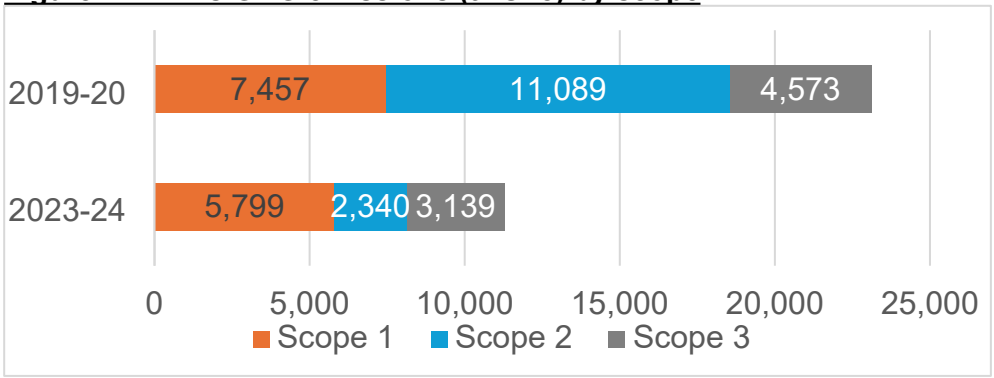
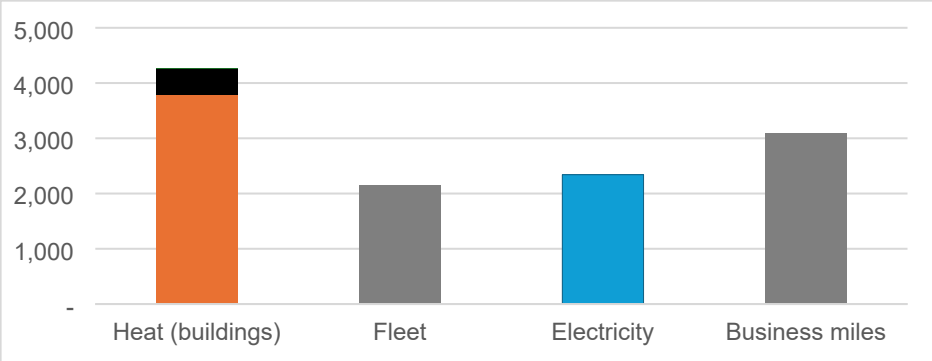


Figure 2: KCC's emissions by use (tCO2e) 2023-24



2. Progress and key achievements

[1] Our Net Zero action plan - Kent County Council
[2] Approach to monitoring KCC Net Zero Report.pdf

Since the baseline year (2019-20), KCC's greenhouse gas (GHG) emissions have decreased by 11,841 tonnes of carbon dioxide equivalent (tCO2e), (or 51%) to March 2024 (the latest full year of data).

KCC's related net zero achievements over this period include[3]:

- Construction of two solar farms delivering 25MW of green electricity (saving over 5,500 tCO2e annually).[4]
- 57% reduction in oil, 56% reduction in electricity, and 17% reduction in gas emissions in our estate (a reduction of 5,347 tCO2).
- Efficiencies and savings across the estate, including rationalisation of estate saving over 838 tCO2e (of combined electricity and gas emissions) annually.
- 70% reduction in waste from KCC's estate and operations and 30% reduction in mileage emissions (a reduction of 1,441 tCO2).
- Significant heat pump projects at five sites providing savings of 677 tCO2e annually.
- Continued roll-out of LED lighting and Solar PV saving an additional 380 tCO2e annually.

Net zero projects - as identified in the Net Zero Plan - have contributed to a total saving of 9,548 tCO2e (2023-24) (of the observed 11,841 tCO2e decrease). Changing emissions factors, additional opportunities outside of the Net Zero Plan (specifically those of Highways such as street lighting optimisation and LED rollout), and a change in usage patterns post-pandemic have all contributed to the overall observed reduction in emissions.

Key observations:

- The largest reductions have been achieved in Scope 2 (electricity use), largely due to the purchase of the solar farm Bowerhouse II.
- Reductions in building emissions (Scope 1) have been realised through a combination of building closures and heat pump projects.
- Since the significant drop during the pandemic business miles have been steadily increasing back towards the previously seen levels. The current year saw a 30% decrease when compared to the baseline.

3. Current Plan

[3] There is some overlap between these figures, i.e. 57% reduction in oil, 56% reduction in electricity and the 17% reduction in gas also represented in rationalisation, the oil and gas savings also overlap with the savings from heat pump projects.
[4] Only 5,059 tCO2e are recorded in this report from Bowerhouse II as Kings Hill Renewable Energy Guarantees of Origin (REGO) was not recognised by OFGEM until after April 2024.

KCC's Net Zero Plan published in 2020 identifies 26 actions. 11 of these actions are directly relevant to decarbonising KCC's operational footprint. The other 15 actions in the Plan contribute to Net Zero but do not have a direct or quantifiable impact on GHG emissions and therefore sit outside of the scope of this review. Progression of these enabling actions that will support but not directly form part of the GHG emissions assessment have been moved to form actions in the new KCC Environment Plan and are not detailed further in this review. Actions are organised (by scope) in Table 1 below, alongside the total estimated savings from the action (based on 2019 emissions factors).[5] Note: Estate rationalisation has been split into two separate actions to show its impact on gas and electricity reductions.

Table 1: Actions in the Net Zero Action Plan (published in 2020) organised by scope with associated estimated savings (tCO2e)

Scope	Action	Description	Total estimated potential tCO2e saving if delivered 100%
 Scope 1	**35% rationalisation (gas)**	Reduce gas consumption in KCC buildings by 2030. Reduce buildings by 35%	1,566
	Electrify fleet	100% of fleet miles to be via electric vehicle by 2030.	1,117
	Maidstone Heat Network	Build Maidstone Heat Network, subject to ongoing feasibility and development	727
	30% Heat pumps	Move 30% of gas heating to heat pumps, insulate those buildings for 20% reduction in heat loss	938
	Switch out oil boilers and transition all back up generators to lower carbon alternatives	Switch remaining oil boilers to gas/heat pumps where practical	1,537
 Scope 2	**Solar farms**	Enable 75MW of solar parks to help meet KCC's energy needs	7,080
	35% rationalisation (electricity)	Reduce electricity consumption in KCC buildings by 2030. Reduce buildings by 35%	1,677
	LED lighting	Roll out LED lighting in KCC buildings where practicable	777
	Solar rooftop	Install solar on roofs of 16 KCC buildings	193

[5] Government conversion factors for company reporting of greenhouse gas emissions - GOV.UK

Scope 3	**Reduce business miles by 33%**	Reduce business miles travelled by 33% by 2030	2,986
	80% of business miles to be via electric vehicle by 2030	Scope out opportunity for electric only lease car scheme	3,565

4. Progress against individual actions in the Net Zero Plan

Figures 3, 4a and 4b provide an overview of progress made against individual targets in the Net Zero plan. Progress is expressed as a percentage in Figure 3 and as a relative contribution to emissions reduction in Figures 4a and 4b*

Figure 3: Progress of net zero actions as a percentage complete

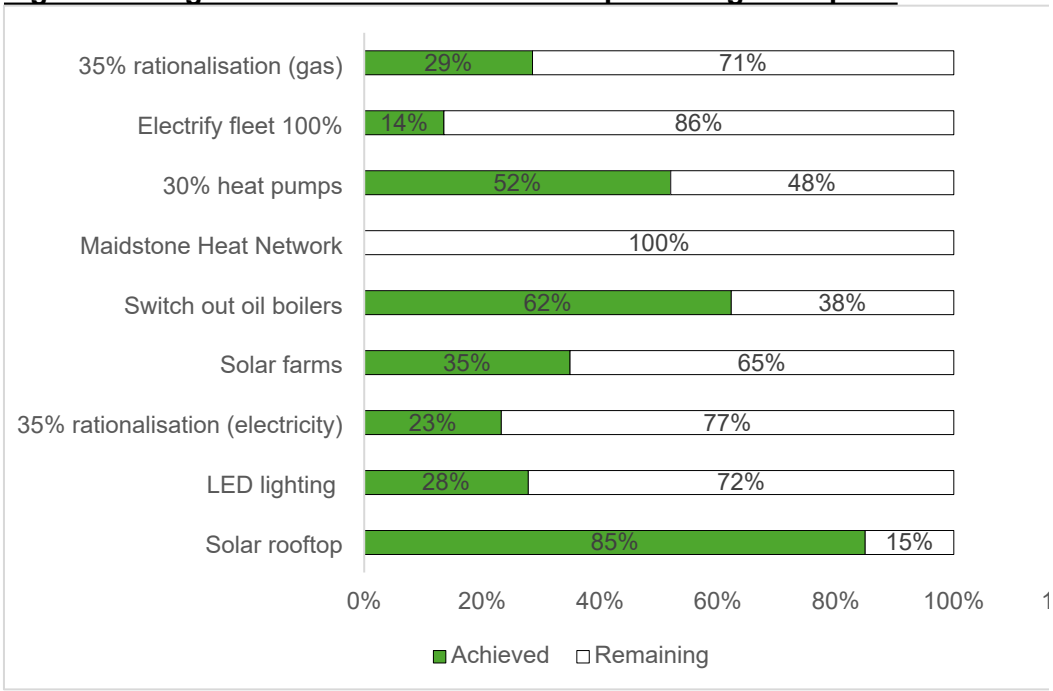


Figure 4a: Progress of net zero actions (achieved vs remaining) relative size tCO2e (solar farms shown separately in Figure 4b, below) **

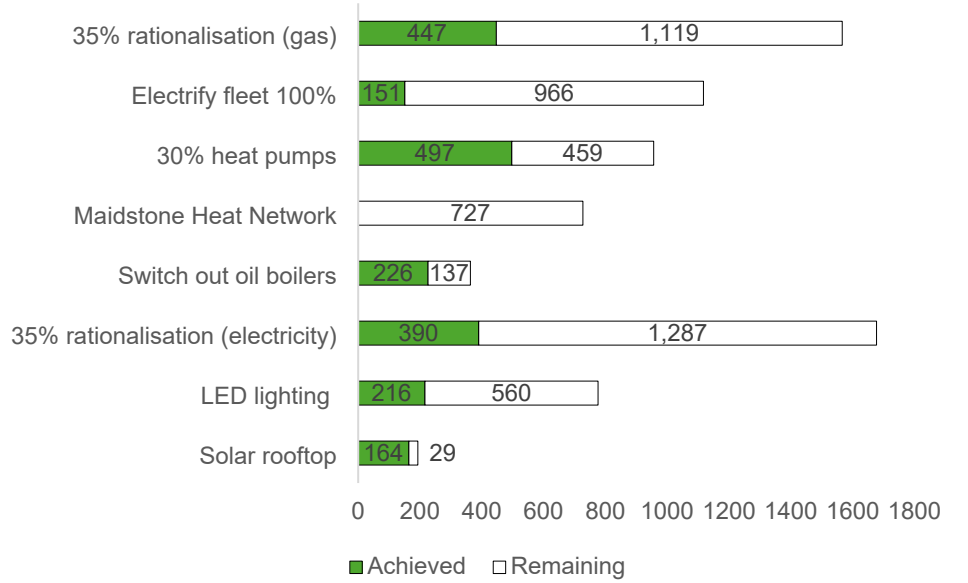
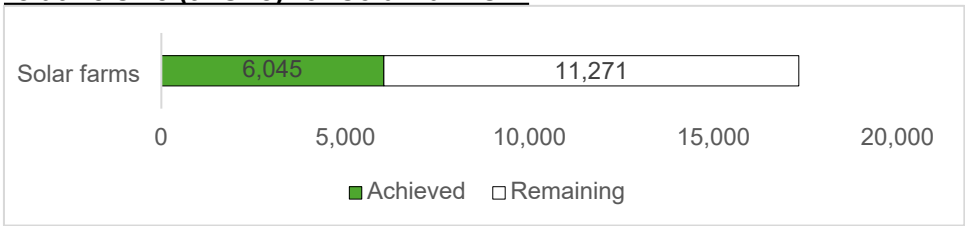


Figure 4b: Progress of net zero actions (achieved vs remaining) relative size (tCO2e) for solar farms **



*Note: Business mileage targets have been removed from this analysis. Unlike Scope 1 and 2 activities, Scope 3 activities are not in KCC's direct control. Business mileage targets are reported on page 9.

**Note: Solar farm progress (Figure 4a, 4b) is displayed on a separate scale to the other actions due to its relative size.

Table 2: Progress / summary of key issues for each action

Scope	Action	Summary of key issues
 Scope 1	**Estate rationalisation (gas)**	There are several dependencies around estate rationalisation, including political decisions and public consultations that need to be considered. The 35% target refers to a number of buildings and does not take account of associated carbon savings. Other actions are dependent on rationalisation being progressed, but the full effect of rationalisation will be dependent on the final buildings that are removed from the estate.
	Electrify fleet	It is understood that this action refers to KCC fleet miles only (not traded companies) which represents 40% of total 'fleet emissions'. Action needs to be understood in terms of *leased* and *owned* fleet which have different treatments: **Leased Fleet** - The leased fleet is to be transitioned to EVs where alternatives exist. The estimated uplift cost for transitioning the leased fleet to EVs is not substantial, however there are other costs (EV infrastructure, potential sub-station upgrades) that still need to be determined. There is a critical date (2026 for some vehicles) where new leases would need to be in place for EVs to avoid contractual 'lock in' at 2030. A full business case and pilot is currently being developed. **Owned fleet** - Transitioning the owned fleet is more complicated due to fact that vehicles will need to be sold and replaced with new EV alternatives. 66% of the owned fleet do not currently have viable EV alternatives due to the specialist nature of those vehicles. Due to this there is currently uncertainty around how to fully achieve this action to 100%. **A significant challenge to fleet electrification is the need for additional EV Charge Point infrastructure**.
	Maidstone Heat Network	KCC could not progress Maidstone Heat Network due to a substantial increase in costs. A private company in connection with the Allington Energy from Waste Facility has proposed to build the Maidstone Heat Network, connecting the top three emitting buildings in the KCC estate. The private bid was awarded commercialisation funding (July 2024). KCC is currently engaging with this process. **KCC's ability to progress this action is dependent on external parties.** Ongoing costs are anticipated to be cheaper than gas prices and connection costs are expected to be considerably cheaper than any other heat decarbonisation option, although exact cost is yet to be determined.
	30% Heat pumps	Two heat pump installations have been progressed through external PSDS funding. There is a limited pipeline of future projects and a funding gap to achieve this action.
	Switch out oil boilers	Three heat pump installations have been progressed through external PSDS funding contributions. Building closures have also contributed to the reduction of emissions from oil boilers. There is a limited pipeline of future projects and a funding gap to achieve this action.
 Scope 2	**Solar farms**	The original 75MW solar farm ambition is more than double the amount required to offset KCC's electricity consumption (even when factoring the increased projected use from EVs and electric heating). There are several financing options including 'rent-a-roof' Power Purchase Agreements, and new technologies (solar carports) that should be explored alongside solar farms. A decision on how best to proceed with solar farms is required.
	Estate	See **estate rationalisation (gas)** – as above.

	rationalisation (electricity)	
	LED lighting	There is a timing issue with the current budget (£257k). It is estimated that the cost of fitting LED lighting across the full estate is in the region of £1.2 million. If we rely on the five-year return on investment before investing in more LED lighting it will be 25 years before this action can be fully completed. The LED programme is tied to estate rationalisation – LED projects are to be avoided in buildings that are likely to be removed from the estate.
	Solar rooftop PV	The original target for 16 buildings is almost complete. This target does not consider the generation potential of Solar rooftop PV across the KCC estate. It should also be considered alongside the *solar farm* target. This work is also tied to estate rationalisation. Projects are to be avoided in buildings that are likely to be removed from the estate.
 **Scope 3**	**Reduce business miles 33%**	The pandemic interrupted operating models, creating a significant - but temporary - reduction in mileage. Pandemic-related backlogs plus inherent growth in service demand is putting mileage targets under pressure.
	80% of business miles to be via electric vehicle by 2030	At present 0.69% of KCC's grey fleet miles are by EV. Progress includes: • A KCC salary sacrifice scheme for EVs has been agreed by HR but not yet scheduled (it is dependent on the new Oracle implementation in 2025). • KCC HR estimates that 6% of eligible staff will take up the salary sacrifice scheme. The latest official Office for Budget Responsibility (OBR) forecast estimates 22% of new vehicle purchases will be EV in 2024, increasing to 38% by 2027 and 80% by 2030.

5. Where does the published plan take us?

Table 1 (above) provides an estimate of the associated carbon savings from the actions in the published plan. The cumulative effect of completing these actions has been deducted from 2023-24 emissions (Figures 5, 6) to show the projected 'residual' emissions in 2030. Figure 5 shows 2024 emissions (Scope 1 and 2) and the projected 'left-over' 2030 emissions based on the savings from the actions in the published plan (i.e. in Table 1). Figure 6 shows this information by emission source. Business mileage has been removed from this analysis for reasons described above.

The left-over emissions are predominantly from heat (gas use) in our buildings and fleet vehicles in traded companies.

Figure 5: 2024 emissions (Scope 1 and 2) and projected residual emissions in 2030 (tCO2e)

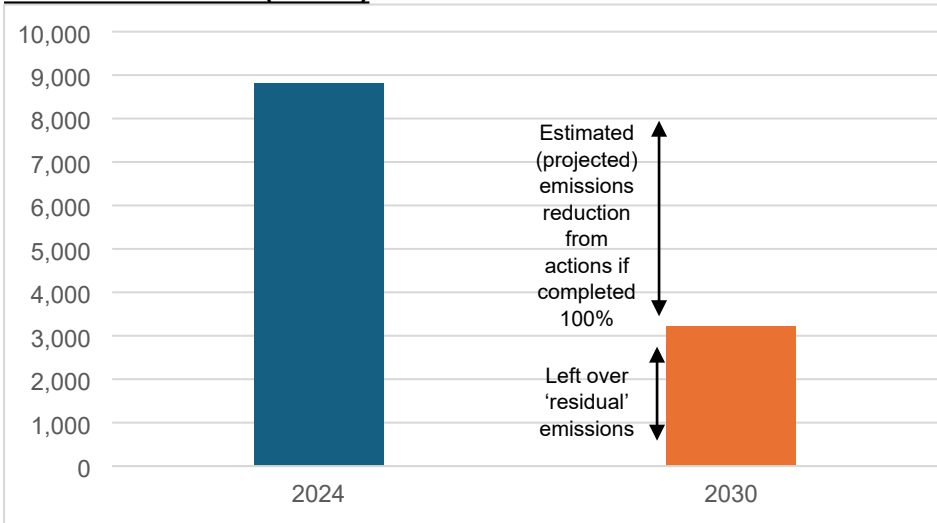
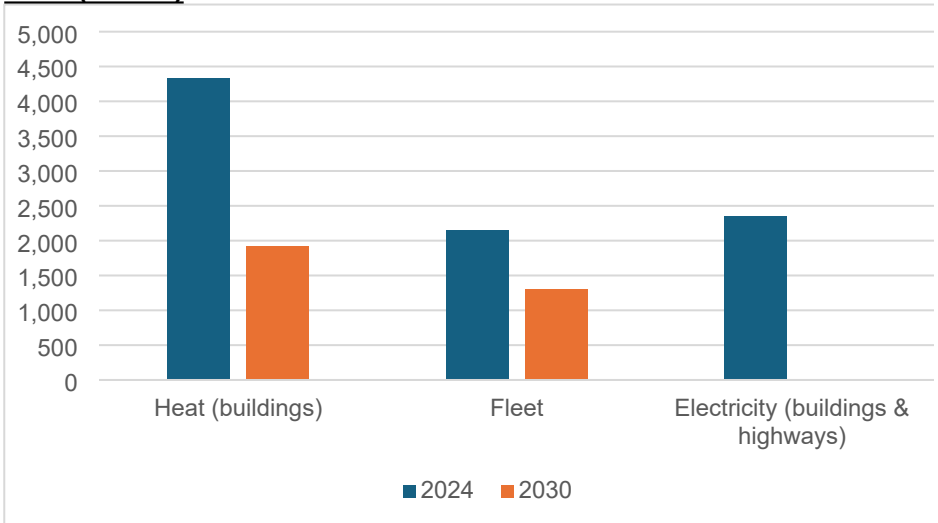


Figure 6: Emissions by source 2024 vs published plan position 2030 (tCO2e)



Offsetting

The assumption is that KCC will achieve "net zero" through the purchase of carbon credits equivalent to the value of 'left-over' emissions. It is widely accepted that offsetting will play a role in compensating for unavoidable and difficult-to-remove emissions after all practicable efforts have been made to reduce Scope 1 and 2 emissions. The Science Based Targets Initiative (SBTI) states that **offsetting should not be used to compensate for emissions reductions**, and only used for the last, residual emissions.[6]

Estimated cost of offsetting

In 2030, it is estimated that UK Government approved offset schemes will cost between £87 - £118 per tonne. Offsetting would need be paid every subsequent year to 'balance' any remaining carbon emissions. The cost of offsetting is projected to increase each year. By 2050, it is estimated that carbon credits will be priced between £138 - £172 per tonne.[7]

As outlined above (Figures 5 and 6) if all published actions relating to Scope 1 and 2 in KCC's Net Zero plan were to be achieved in full, 3,210 tCO2e would still need to be removed to attain 'Net Zero'. In 2030, offsetting this amount is projected to cost between £179,760 and £378,780, based on current estimates.[8] Over the period 2030-2035, to offset this amount would cost KCC between £1,996,620 and £2,751,210. **Offsetting would continue indefinitely** until KCC's net emissions reach zero. Projecting the cost of offsetting these emissions to 2050 would cost between **£5,916,030 and £10,570,530.** This approach means that KCC would 'pay twice'- once to (eventually) replace emitting technologies, and again, to offset emissions from these technologies.

Offsetting is distinct from renewable energy generation. KCC's acquisition of solar farms (of Bowerhouse II and King's Hill) generate green electricity. In the year 2023-24, Bowerhouse II generated green electricity equivalent to saving 5,059 tCO2e. Certification from OFGEM (Renewable Energy Guarantees of Origin) allows KCC to deduct green electricity generated at our solar farms from electricity consumed in our estate. This has helped to reduce KCC's Scope 2 emissions by 68%.

The solar farms have been our single most effective carbon reduction measure to date. Energy generation cannot be used to offset Scope 1 emissions in the same way. Emissions from Scope 1 can only be 'offset' through carbon sequestration projects.

[6] Science-Based Net-Zero Targets: 'Less Net, more Zero' - Science Based Targets Initiative
[7] Traded carbon values used for modelling purposes, 2023 - GOV.UK (www.gov.uk)
[8] Traded carbon values used for modelling purposes, 2023 - GOV.UK (www.gov.uk)

6. How much will it cost to deliver KCC's Net Zero plan?

This page provides indicative costs to deliver against the remaining targets in the current Net Zero Plan. **All costs are estimates** and do not take into account specific sites. Savings can be achieved in a variety of ways which are difficult to account for i.e. oil boilers can be removed from the estate by replacing them with heat pumps or the building could be rationalised. Costs are calculated by LASER, against the remaining **targets** in the Net Zero Plan.

Note: *Costs are indicative desktop assessments (provided by LASER) based on industry best-practice; previous project delivery and current market conditions but are not site specific. Actual costs and returns will vary with full feasibility studies. All values are in current terms and do not account for inflation, energy, supply chain and labour cost fluctuations. See Appendix 3 for assumptions used in this analysis.*

Table 3: Indicative cost to deliver against the remaining targets in the Net Zero plan

Scope	Action	tCO2e savings	Capital investment (£000)	Annual net savings (£000)	ROI (years)	Commentary
 Scope 1	**35% estate rationalisation (gas)**	1,566	0	4,543	n/a	Savings are generated from money saved from gas bills. There is a cost to delivering this programme but no additional cost related to carbon reduction
	Electrify KCC fleet (leased)	491 - 703	224	168	1	Leased vehicles are costed separately to KCC-owned vehicles. Capital investment is the estimated 'uplift' cost from transitioning 213 vehicles from KCC's leased fleet.
	Electrify KCC fleet (owned) *Represents 100% of savings. This is not technologically feasible at this time	394 - 614*	830	180	5	Costs are the estimated difference of 'buying new'. 75 of 108 owned vehicles (66%) in the KCC fleet do not currently have EV alternatives.
	Maidstone Heat Network **Analysis includes Sessions House which has subsequently been confirmed to be sold. Numbers likely to reduce by two-thirds.	727**	30**	43**	1	This is the cost of heat exchangers for Invicta House, Sessions House and the Kent History and Library Centre to enable these buildings to join the Maidstone Heat Network (being progressed by a private company). This estimate was produced before the decision to exit Sessions House which will reduce costs and tonnage for connection.
	30% Heat pumps	459	2,703	39	n/a	This is the estimated cost to deliver against the remaining Heat Pump target of 30%.
	Replace oil boilers	137	526	2	n/a	This is the estimated cost to replace remaining oil boilers on the KCC estate with heat pumps. This

						action could also be met through rationalisation.
Scope 2 	**Solar farms (additional 50MW)**	10,669	48,000	4,065	14	This is the cost to meet the overall 75MW target. KCC only requires an additional 12MW to meet electricity usage. The current target overshoots our electricity requirement by 9,750tCO2e.
	35% rationalisation (electricity)	1,119	0	1,653	n/a	Savings are generated from money saved from electricity bills. There is a cost to delivering this programme, but no additional cost related to carbon reduction.
	LED lighting	560	1,285	237	5	This is the estimated cost of delivering 100% LED lighting in the estate.
	Solar rooftop PV (one building)	29	105	20	5	This is the estimated cost to deliver solar rooftop PV for one building, the remaining target of 16 from the initial plan.

7. What about business miles?

Business mileage is a Scope 3 emission and as such is outside of KCC's direct control. Figure 7 shows GHG emissions from recorded business mileage from the baseline year (2019-20) to 2023-24. Figure 8 shows annual percentage reduction in business mileage compared to the baseline. KCC's Net Zero plan has a target to reduce business miles by 33% based on 2019-20 emissions. At best this reduction is a snapshot in time and does not reflect the trends in the data, nor growth in service demand or changing operating models. Business miles derive from employees' personal vehicles over which KCC has no control.

The most recent year 2023-24, for example, represents a 31% reduction in business mileage. In comparison, 2020-21 saw a 58% reduction in business mileage. There has been an upward trend in business miles since 2021 which has plateaued in the most recent set of data. Given that service demand is expected to increase in some directorates, mileage is expected to follow.

Directorates focus on in-year mileage targets and have a blanket 4% emission reduction target each year. Less than 1% of business miles are driven in EVs.

Figure 7: GHG emissions from recorded business mileage

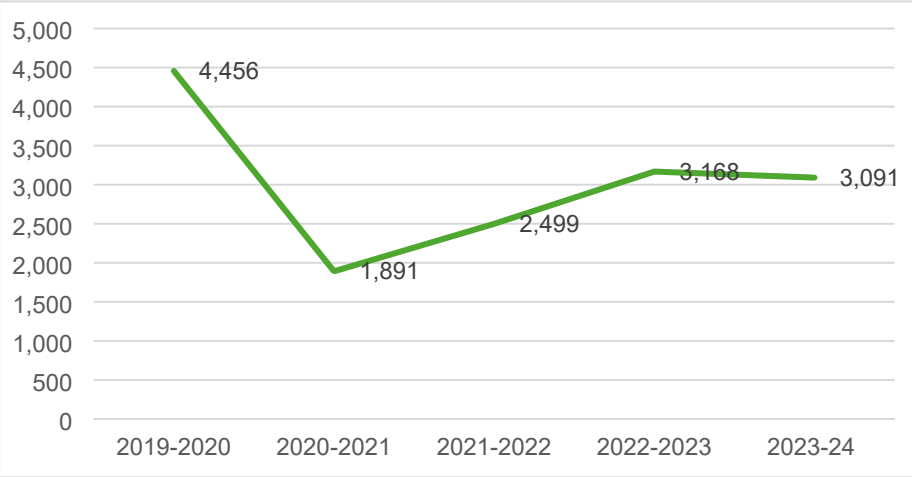
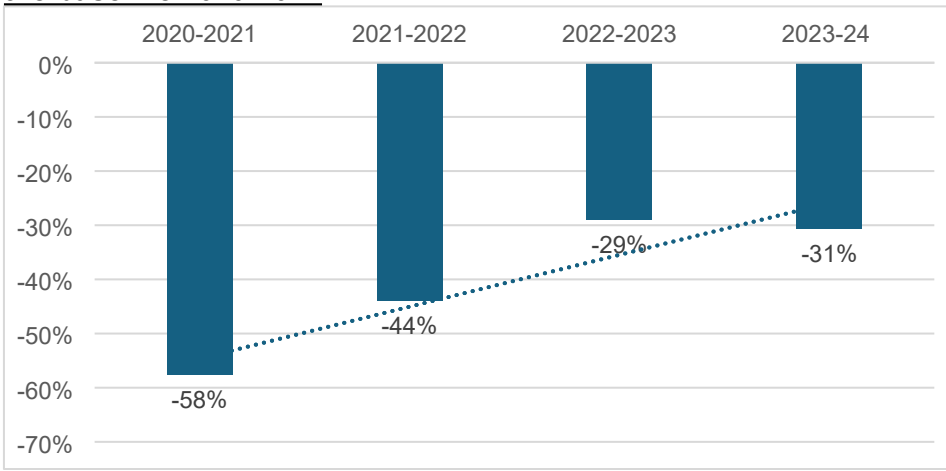


Figure 8: Annual business mileage reduction as a percentage of the baseline 2020-2024



8. What about other Scope 3 emissions?

Scope 3 emissions from service delivery and supply chains are indirect emissions that occur in our value chain but are not directly controlled by KCC. Scope 3 emissions can broadly be understood through five categories:

1. Purchased materials and fuels
2. Transport related activities (including commuting and business miles)
3. Waste Disposal (processing of wate).
4. Leased assets and franchising, outsourcing (all contractor emissions)
5. Sold goods and services (emissions related to the use of local authority services).

The measurement of Scope 3 emissions is an emerging area, but they usually represent a significant portion (70-80%) of a local authorities' overall emissions.[9] Provisional data estimates this to be in the region of 400,000 tCO2e – 800,000 tCO2e (compared to the 8,140 tCO2e from KCC's Scope 1 and 2).

A wider exercise should be undertaken to understand Scope 3 emissions. As such, business mileage targets will be re-categorised under this banner of work and removed from the 'operations and estate' Net Zero Plan.

[9] Climate Change: reporting guidance for local authorities | Local Government Association

Appendices

Appendix 1: GHG Protocol reporting financial years 2019-2020 to 2023-24 based on varying emissions factors

Scope	Usage		2019-2020	2020-2021	2021-2022	2022-2023	2023-24
Scope 1	Heating: Gas used in buildings	FM	4,207.55	4,322.44	4,155.90	3,683.54	3,454.73
		Non-FM	268.06	288.33	297.35	225.69	223.73
		Commercial services	51.01		69.68	79.86	103.45
		Invicta Law	7.34	32.70	19.74	-	-
		The Education People	0.19	1.85	1.64	1.19	1.21
	Heating: Oil used in buildings	FM	630.77	334.21	521.91	296.47	262.74
		Non-FM	83.17	42.25	15.38	6.78	11.84
		Commercial Services	426.61	50.80	49.92	58.62	199.83
		The Education People	-		3.07	3.07	7.68
	Heating: Other	FM	7.77	6.41	11.59	10.14	10.21
	Transport: Fuel used by fleet (Fuel card)	KCC	1,001.74	733.62	742.71	815.59	845.32
		Commercial Services	747.95	677.04	695.56	667.51	644.40
		The Education People			4.86	5.69	4.28
		Cantium Business Solutions	3.30	1.96	2.83	1.51	1.48
		Commercial Services	747.95	677.04	695.56	667.51	644.40
	F Gas	KCC	22.16	26.61	-	-	28.60

Appendix 1 (continued : GHG Protocol reporting financial years 2019-2020 to 2023-24 based on varying emissions factors

Scope	Usage		2019-2020	2020-2021	2021-2022	2022-2023	2023-24
Scope 2	Electricity used in buildings	FM	4,211.32	2,832.89	2,867.17	2,484.93	2,429.29
		Non-FM	575.07	349.57	499.96	499.58	512.98
		Commercial services	310.20	248.48	244.35	240.87	267.66
		Invicta Law	44.53	10.42	9.22	-	-
		The Education People	1.78	1.62	2.16	2.08	2.34
	Electricity used by Highways	Lighting	5,113.15	3,887.94	3,884.64	3,501.28	3,718.83
		Lighting Signals	132.45	111.59	114.64	92.13	100.37
		Other Highways	700.70	478.63	450.98	433.40	368.46
	Generation	Bowerhouse II	-	-	-	-2,764.50	-5,059.07
Scope 3	Grey fleet	KCC directorate	4,120	1,819	2,367	2,944	2,836
		Commercial Services	90.21	18.25	38.84	89.21	124.70
		Invicta Law	8.74	0.11	0.21	2.45	3.51
		Education People	159.75	21.59	56.77	90.99	77.09
		Cantium	77.67	32.31	36.29	41.48	49.56
	Waste	KCC	81	115	175	24	11
		Commercial Services Waste	13.61	11.70	8.77	7.73	8.85
		Invicta Law Waste	0.19	0.22	0.26	-	-
		The Education People Waste	0.06	1.72	4.25	4.83	0.31
		Cantium Business Solutions Waste	0.09	0.05	0.02	-	28.6

Appendix 2: Summary of GHG emissions by scope financial years 2019-2020 to 2023-24 based on varying emissions factors

Scope total	Emissions (tCO2e)				
	2019-20	2020-2021	2021-2022	2022-23	2023-2024
Scope 1 total	7,457.64	6,518.24	6,592.13	5,855.65	5,799.51
Scope 2 total	11,089.20	7,921.15	8,073.14	7,254.27	7,399.91
Scope 3 total	4,573.66	2,046.70	2,687.80	3,204.60	3,139.51
Gross total	23,120.50	16,486.09	17,353.07	16,314.52	16,338.93
Generation	-	-	-	-2,764.50	-5,059.07
Net total	-	-	-	13,550.03	11,279.86

Appendix 3: Description of assumptions used in the workstream analysis

Action	Description / assumptions
35% estate rationalisation (gas)	No cost is assumed. Savings are associated to a flat reduction of purchased gas and electricity (averaged over the estate, not tied to specific buildings).
35% estate rationalisation (elec.)	
Business mileage	2023-24 costs (business mileage claims) have been included as an indicative measure but not costed at the current time.
Electrify (leased) fleet	Estimated additional cost (uplift) of changing leased vehicles to EV where alternatives exist. The leased fleet has been separated from "owned" fleet to demonstrate the different carbon savings and costs associated to each action. No costs for charging points have been included, nor has any other cost for infrastructure / DNO costs. Several options for charge point provision exist, including, where practical, installing charge points at employee residences.
Heat Network	Estimated cost of purchasing heat exchanges for Invicta House, Sessions House and Kent History and Library Centre to join the proposed heat network. Savings are the difference between the expected cost of heat from the network p/kWh compared to current gas price. CO2e from the heat network is expected to be 80% less than gas.
LED lighting	Additional LED lighting, average savings compared to alternatives not tied to specific sites representing ~100% coverage. Costs are aligned to the remaining target and expresses the 'minimum' amount of savings to be realised by this action.
Solar rooftop PV	Additional solar rooftop PV to meet the original ambition of solar PV on 16 rooftops, average savings compared to alternatives, not tied to specific sites. Costs are aligned to the remaining target and expresses the 'minimum' amount of savings to be realised by this action.
Electrify (owned) fleet	Estimated additional cost of purchasing EV over new petrol or diesel vehicle where alternatives exist.
30% heat pumps	Installation percentages relate to gas consumption that will be reduced within the portfolio by moving from conventional boilers to heat pumps. A coefficient of performance of 2.83 has been used based on recent industry information from a government source, and the capital investment figure of £1.50/kWh has been calculated using an average figure based on numerous surveys carried out for multiple LASER customers. An assumption that buildings will be insulated to reduce consumption by 20% has been used, with a payback of 10 years used to calculate the required investment.
Oil boilers	As above
Solar farms	Additional 12.1 MW solar farm sufficient to meet the expected increase in electricity demand from KCC estate and operations accounting for increase in EV charging and electric heating.
Additional 60% heat pumps	Cost of purchasing and running heat pumps to meet an additional 60% of the estate's heat demand.